REMARKS

Claims 1, 3, 4, 6-14, 16, 17, 19, 21-25, 27-35 and 37-39 are currently pending in the subject application and are presently under consideration. Claims 1, 13, 22 and 34 have been amended as shown on pp. 2-7 of the Reply. Claim 19 has been canceled.

Applicants' representative thanks the Examiner for the courtesies extended during the teleconference of February 13, 2008.

Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

I. Rejection of Claims 1, 3-4, 6-12, 22-25, 27-35 and 37-39 Under 35 U.S.C. §103(a)

Claims 1, 3-4, 6-12, 22-25, 27-35 and 37-39 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Wotring *et al.* (US Patent No. 6,853,997) filed June 28, 2001, in view of Wang *et al.* (US Patent No. 6,907,433) filed August 1, 2001, and further in view of Ludwig *et al.* (US Patent No. 6,006,230) filed January 29,1997. It is respectfully submitted that this rejection should be withdrawn for the following reasons. Wotring *et al.*, Wang *et al.* and Ludwig *et al.*, individually or in combination, do not teach or suggest each and every element set forth in the subject claims.

Applicants' claimed subject matter relates to a system and method to facilitate mapping between disparate domain models such as an object oriented programming model and a relational database model. Specifically, the system discloses an object schema component that provides a mechanism for providing a bridge between a transient graph of objects and a related persistent data store. Independent claim 1 recites, namely: a computer executable data structure comprising: *a first data structure that describes one or more classes which define programmatic objects; a second data structure that describes members of each class and comprises compound members that allow mapping of complex members as inline members of a given class, which allows inline mapping of arrays, structs and entity key members; and a third data structure that describes relationships between objects,...; and* ***wherein the member properties include an alias attribute that is employed by a query language to identify a private member used to generate a query, the alias points to a public member that is to be utilized in place of the associated***

private member in text of a query. Wotring *et al.*, Wang *et al.* and Ludwig *et al.*, individually or in combination, fail to teach or suggest such aspects of the claimed subject matter.

Wotring *et al.* discloses a system and method for allowing data to be shared without requiring that the data be remodeled to fit a common format or convention. The users of the data may keep their own data formats and may dynamically transform the data contained in their structure into a structure compatible with another definition without having to physically change their data or its structure. Specifically, the data is transformed from a Relational Database Management System (RDBMS) to a hierarchical format. Since RDBMS information is stored in separate tables joined through a specified key structure, information needs to be repackaged as a whole for use in data communication across a local area network (LAN), or a wide area network (WAN). The system discloses transforming data stored in relational format into a hierarchical format, such as a markup language. As information is transformed into the hierarchical structure from a RDMBS, the information then assumes the hierarchical representation of the logical records contained in the database. (*See* col. 2, line 63-col. 3, line 52).

In contrast, applicants' claimed subject matter discloses a system for mapping object components to relational components. The object schema of the system provides one portion of a three-part mapping. The other two schema components are a mapping schema and a relational schema. The object schema component describes data classes as well as relations there between as specified in an object-oriented model, for example. Relational schema component utilizes metadata associated with a database to generate an implementation neutral or implementation specific format that represents the precise database structure and data. Mapping schema component provides the mapping between the object schema and the relational schema. (*See* pg. 9, line 30-pg. 10, line 26). Furthermore, members associated with each class to be persisted are identified. Members can include class fields and properties. Members can be compound members comprising at least one field or property and another compound member. Thus, a compound member can be an array. Furthermore, it should be appreciated that member attributes can also be specified. For example, a member can be identified as a key or a member can identify an alias. (*See* pg. 22, lines 3-13).

Whereas, Wotring *et al.* merely discloses transforming data stored in relational format into a hierarchical format such as a markup language. The system provides for mapping each of the plurality of elements in the hierarchical data entity to information in a relational dataset, and

transforming the relational dataset into corresponding mapped elements in the hierarchical data entity to form a hierarchical data structure. Wotring *et al.* does not disclose identifying a name of a member to be used as an alias to query a private number.

Wang *et al.* does not make up for the aforementioned deficiencies of Wotring *et al.* with respect to independent claim 1. Wang *et al.* discloses a system for managing object to relational, one-to-many mapping. The system uses mapping of meta-data to generate instructions to manipulate target objects and relationships in a relational database. The mapping of meta-data contains information as to how object classes of the object model map to tables in the database and how relationships map to foreign keys. (*See* col. 2, lines 3-25).

As stated *supra*, applicants' claimed subject matter discloses a system for mapping object components to relational components that describes data classes. The members associated with each class to be persisted are identified. Members can include class fields and properties. Members can be compound members comprising at least one field or property and another compound member. Thus, a compound member can be an array. Furthermore, it should be appreciated that member attributes can also be specified. For example, a member can be identified as a key or a member can identify an alias. (*See* pg. 22, lines 3-13). Wang *et al.* merely discloses that the one-to-many relationships can be composed into two groups, privately owned and independent. Wherein, a privately owned relationship is one in which the target object is a dependent part of the source object and cannot exist on its own without the source object. (*See* col. 4, lines 29-36). Wang *et al.* does not disclose identifying a name of a member to be used as an alias to query a private number.

Ludwig *et al.* does not make up for the aforementioned deficiencies of Wotring *et al.* and Wang *et al.*, with respect to independent claim 1. Ludwig *et al.* discloses a database client/server development system providing support for remote sessions with user-created application objects. When a user desires to create a remote-able object from a user object, the user assigns a proxy name or alias, thereby providing a mechanism to differentiate the real (local) version of the object from a remote version of that object. (*See* col. 3, lines 18-25).

As stated *supra*, applicants' claimed subject matter discloses a system for mapping object components to relational components that describes data classes. The members associated with each class to be persisted are identified. Furthermore, it should be appreciated that member attributes can also be specified. For example, a member can be identified as a key or a member

can identify an alias. The alias is employed by a query language to identify the private member used to generate a query. The alias value points to a public member that is utilized instead of the associated private member in the text of a query. (*See* pg. 13, lines 10-15). Ludwig *et al.* merely discloses assigning a proxy name or alias to a remote-able object, this provides a mechanism to differentiate the real (local) version of the object from the remote version of that object. (*See* col. 9, line 65 – col. 10, line 5). Ludwig *et al.* does not disclose employing an alias by a query language to identify a private member, but merely uses a proxy name or alias to differentiate between a local version and a remote version of an object. Accordingly, Ludwig *et al.* is silent with regards to a computer executable data structure, comprising: …***wherein the member properties include an alias attribute that is employed by a query language to identify a private member used to generate a query, the alias points to a public member that is to be utilized in place of the associated private member in text of a query***.

Furthermore, independent claim 22 recites a method for producing an object schema comprising: *specifying classes to be persisted to a data store; identifying members of each class,...; specifying relationships between classes,...; and* ***identifying a name of a member to be used as an alias to query a private member, wherein an alias attribute that is employed by a query language to identify a private member is used to generate a query, the alias points to a public member that is to be utilized in place of the associated private member in text of a query***.

As stated *supra*, Wotring *et al.* merely discloses transforming data stored in relational format into a hierarchical format such as a markup language. The system provides for mapping each of the plurality of elements in the hierarchical data entity to information in a relational dataset, and transforming the relational dataset into corresponding mapped elements in the hierarchical data entity to form a hierarchical data structure. And, Wang *et al.* merely discloses that the one-to-many relationships can be composed into two groups, privately owned and independent. Wherein, a privately owned relationship is one in which the target object is a dependent part of the source object and cannot exist on its own without the source object. And, Ludwig *et al.* merely discloses assigning a proxy name or alias to a remote-able object, this provides a mechanism to differentiate the real (local) version of the object from the remote version of that object. Accordingly, Wotring *et al.*, Wang *et al.* and Ludwig *et al.* do not disclose identifying a name of a member to be used as an alias to query a private number.

Furthermore, independent claim 34 recites a method for generating an object schema comprising: *receiving program code that describes one or more classes which define objects; describing members of each class,...; receiving input from a developer; generating an object schema to be employed to facilitate mapping object components from an object oriented program to tables in a relational database,...; and* ***wherein the member properties include an alias attribute that is employed by a query language to identify a private member used to generate a query, the alias points to a public member that is to be utilized in place of the associated private member in text of a query***.

As stated *supra*, Wotring *et al.* merely discloses mapping each of a plurality of elements in the hierarchical data entity to information in a relational dataset, and transforming the relational dataset into corresponding mapped elements in the hierarchical data entity to form a hierarchical data structure. And, Wang *et al.* merely discloses that the one-to-many relationships can be composed into two groups, privately owned and independent. And, Ludwig *et al.* merely discloses assigning a proxy name or alias to a remote-able object, this provides a mechanism to differentiate the real (local) version of the object from the remote version of that object. Accordingly, Wotring *et al.*, Wang *et al.* and Ludwig *et al.* do not disclose identifying a name of a member to be used as an alias to query a private number.

In view of the aforementioned deficiencies of the cited references, it is respectfully submitted that this rejection be withdrawn with respect to independent claims 1, 22 and 34 (which claims 3-4, 6-12, 23-25, 27-33, 35 and 37-39 depend respectively there from).

II. Rejection of Claims 13-14, 16-17, 19 and 21 Under 35 U.S.C. §103(a)

Claims 13-14, 16-17, 19 and 21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Wang *et al.* (US Patent No. 6,907,433) filed August 1, 2001, in view of Bigus *et al.* (US Patent No. 7,136,843) filed October 23, 2002. It is respectfully requested that this rejection should be withdrawn for at least the following reasons. Wang *et al.* and Bigus *et al.*, individually or in combination, do not teach or suggest each and every element as set forth in the subject claims.

Applicants' claimed subject matter relates to a system and method to facilitate mapping between disparate domain models such as an object oriented programming model and a relational database model. Specifically, the system discloses an object schema component that

provides a mechanism for providing a bridge between a transient graph of objects and a related persistent data store. In particular, the object schema provides metadata describing a given set of classes in addition to a program assembly containing type definitions. The metadata can subsequently be utilized by a mapping system to translate relational data to and from user objects during a materialization or persistence process.

Independent claim 13 recites: an object schema generation system comprising: *a code reader component adapted to read or retrieve code from an object-oriented program or set of programs,...; wherein the mapping schema provides the mapping between the object schema and the relational schema, and the relational schema utilizes metadata associated with the data store to generate an implementation specific format that represents the data store structure; and* ***wherein the object schema provides information concerning classes, members of classes, and their relationships and wherein properties of the members of classes include an alias attribute that is employed by a query language to identify a private member used to generate a query, the alias points to a public member that is to be utilized in place of the associated private member in text of a query;*** *and wherein the object schema generation component utilizes rule based artificial intelligence to provide heuristics necessary to build the schema.* The cited references do not expressly or inherently disclose the aforementioned novel aspects of applicants' claimed subject matter as recited in the subject claims.

Wang *et al.* discloses a system for managing object to relational, one-to-many mapping. The system uses mapping of meta-data to generate instructions to manipulate target objects and relationships in a relational database. The mapping of meta-data contains information as to how object classes of the object model map to tables in the database and how relationships map to foreign keys. (*See* col. 2, lines 3-25).

As stated *supra*, applicants' claimed subject matter discloses a system for mapping object components to relational components that describes data classes. The members associated with each class to be persisted are identified. Members can include class fields and properties. Members can be compound members comprising at least one field or property and another compound member. Thus, a compound member can be an array. Furthermore, it should be appreciated that member attributes can also be specified. For example, a member can be identified as a key or a member can identify an alias. (*See* pg. 22, lines 3-13). Wang *et al.* merely discloses that the one-to-many relationships can be composed into two groups, privately

owned and independent. Wherein, a privately owned relationship is one in which the target object is a dependent part of the source object and cannot exist on its own without the source object. (*See* col. 4, lines 29-36). Wang *et al.* does not disclose identifying a name of a member to be used as an alias to query a private number.

Bigus *et al.* does not make up for the aforementioned deficiencies of Wang *et al.*, with respect to independent claim 13. Bigus *et al.* discloses a plurality of machine reasoning modules or inference engines that are processed against a single rule-based knowledge representation (rule language). This allows a user to maintain a single repository of domain knowledge for use by the plurality of inference engines. (*See* col. 2, lines 7-15).

As stated *supra*, applicants' claimed subject matter discloses a system for mapping object components to relational components that describes data classes. The members associated with each class to be persisted are identified. Furthermore, it should be appreciated that member attributes can also be specified. For example, a member can be identified as a key or a member can identify an alias. The alias is employed by a query language to identify the private member used to generate a query. The alias value points to a public member that is utilized instead of the associated private member in the text of a query. (*See* pg. 13, lines 10-15). Bigus *et al.* merely discloses the utilization of a rule based artificial intelligence and does not disclose employing an alias by a query language to identify a private member. Accordingly, Bigus *et al.* is silent with regards to an object schema generation system, comprising: ...***wherein the object schema provides information concerning classes, members of classes, and their relationships and wherein properties of the members of classes include an alias attribute that is employed by a query language to identify a private member used to generate a query, the alias points to a public member that is to be utilized in place of the associated private member in text of a query***...

In view of the aforementioned deficiencies of the cited references, it is respectfully submitted that this rejection be withdrawn with respect to independent claim 13 (and claims 14, 16-17, 19 and 21 which depend there from). Accordingly, it is respectfully requested that these claims be deemed allowable.

CONCLUSION

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [MSFTP567US].

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number below.

Respectfully submitted,

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